

CROP PRODUCTION NEWS

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C R O P S

Editor's Comments

By Faye Dokken-Bouchard, PAg, Crops Branch

Welcome back to another growing season with the Crop Production News (CPN)!

We welcome any feedback you have to help us improve the value of our publication. We had a small number of responses, all positive, from our 2010 CPN follow-up survey. If you didn't get a chance to respond last season, please take five minutes of your time to share your thoughts with us at: www.surveymonkey.com/s/DMR7VX9

Those who have requested to receive the CPN (over 500 subscribers by the end of 2010) will be notified by email each time a new edition has been posted on the Ministry website. Please encourage your colleagues, neighbours, and customers to contact us if they wish to subscribe to CPN.

With the ongoing issues of excess soil moisture, we could have another challenging season ahead. For an update on provincial crop progress throughout the growing season, see the weekly Crop Report at www.agriculture.gov.sk.ca/Crop-Report.

The spring update to the 2011 Guide to Crop Protection is now available on our website at www.agriculture.gov.sk.ca/Guide_to_Crop_Protection.

NOTE: Throughout this document, you will see that some publications are in blue font and underlined, indicating links to website information. If you are reading this on your computer screen, click your cursor on the link to take you directly to the website. ☪

Crop Production News is a bi-weekly publication prepared primarily by provincial specialists with the Crops Branch and Regional Services Branch of the Saskatchewan Ministry of Agriculture. It is a compilation of articles related to entomology, plant pathology, weed science, soils and agronomy issues.

Please do not use any of these articles for any other purpose without first asking the author's permission.

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Crop Protection Laboratory Update

By Philip Northover, AAg, Supervisor, Crop Protection Laboratory

The past winter was busy as usual at the Crop Protection Laboratory. Most notably, herbicide resistance samples were evaluated for resistance to Groups 1, 2, 3 and 8 and barley and wheat samples were analyzed for fusarium head blight (FHB) severity and species identification. For results of the FHB and other disease surveys, visit the Canadian Plant Disease Survey website.

Adding to the excitement over the winter, the Crop Protection Laboratory hosted several tours, was featured on CTV Farmgate, and has been preparing for new equipment and renovations for future expansion of services.

Tours included three producer group tours over the winter; the Saskatchewan Alfalfa Seed Producers Association, the Saskatchewan Organic Directorate, the Western Canadian Wheat Growers Association and the Western Barley Growers Association. In March, Grade 11 students from Greenall School in Balgonie visited the lab to learn more about agriculture. The students learned techniques that are used to detect viruses, viewed food decay organisms under the microscope, and examined bees for varroa mites.

This year we welcome a new summer student at the Crop Protection Laboratory; Marla Ives, who will be working with the Dutch Elm Disease Program. We look forward to working with her over the next few months as she becomes familiar with this destructive tree disease. ☼



Figure 1: Planting carnation seeds for use with Fusarium Head Blight work.
Source: Saskatchewan Agriculture.



For information about submitting samples to Saskatchewan Agriculture's Crop Protection Lab go to:

www.agriculture.gov.sk.ca/Crop_Protection_Lab;
or phone (306) 787-8130.

Agriculture Knowledge Centre Update

By Brent Flaten, PAg, Integrated Pest Management Specialist

Seeding issues have dominated calls at the Agriculture Knowledge Centre (AKC) over the past couple of weeks. Producers want to know the possible consequences of adjusting their rotations. Economic pressures have to be balanced with agronomic issues such as increased disease risk when considering tightening a crop rotation. Seed quality continues to be a top concern for producers. At this stage it is often too late for producers to find better quality seed than they already have. Seed treating and adjusting seeding rates does not entirely fix the problem, however, in some cases, it can be used to minimize crop establishment issues. Other questions affecting seeding decisions include choices for seed varieties and herbicide re-cropping restrictions. Recent inquiries have shifted towards weed identification and pre-seed burnoff choices. Some producers are also checking out different green manure options.

Soil questions have been revolving around fertilizers, including soil sampling, nutrient requirements for crops, maximum safe seedrow rates, types of fertilizer and methods of application, including broadcasting. Related questions have included soil temperatures needed for crop germination, and the pros and cons of various seeder openers.

Forage stand termination has been the focus of forage producer phone calls to the AKC. Spraying out perennial legumes with glyphosate at this time of year is challenging, and often comes with poor results. Pre-harvest glyphosate application later in the season, followed by a glyphosate plus 2,4-D amine on fall re-growth is a recommended strategy. ⚙

Agriculture Knowledge Centre

Hours: 8 a.m. to 5 p.m. Monday to Friday
Phone: 1-866-457-2377

Got a question?

E-mail: aginfo@gov.sk.ca

Want to submit your question online?

Go to our [Ask Saskatchewan Agriculture](#) form page.

Dealing with Excess Moisture

By Ken Panchuk, PAg, Provincial Specialist, Soils

Seeding is underway and producers are dealing with issues surrounding moist conditions. A new fact sheet *Tips for Seeding Under Wet and/or Cool Conditions* has been posted on the Saskatchewan Agriculture website under the “[Dealing with Excess Moisture](#)” link. There are a number of topics ranging from crop to livestock issues. The purpose of the fact sheet is to help producers maintain crop quality and produce desired yields by addressing situations that may arise this spring.

For more information: Contact your Regional Crops Specialist or the Agriculture Knowledge Centre at 1-866-457-2377, or visit www.agriculture.gov.sk.ca

Variable Canary Seed Yield in 2010

By Blaine Recksiedler, PAg, Provincial Specialist, Cereal Crops

During the late 2010 harvest the Ministry received calls on variable canary seed yield. In some cases yield was very poor whereas other crops yielded normally. The poor yield was surprising to the farmers because the stand was often very good; however there were very few kernels in the heads. Regional Crops Specialists collected samples and pertinent agronomic information as a starting point to try to understand what happened.

Analysis of canary seed samples at the Crop Protection Laboratory did not show anything that could reasonably explain the poor yield. Saprophytic fungi were abundant on the samples, but this was expected because they were collected late and the plant material was dead. Saprophytes could be another symptom of the problem, but not the cause. Neither disease nor abnormality was identified as a possible explanation.

In addition to piecing together information gathered from farmer situations, seeding date and yield data from research stations was reviewed. Environmental data had also been collected over the growing season, such as temperature (including frost), growing degree days and precipitation. The only common thread was precipitation - up to two times the normal amount for the growing season.

There is research suggesting that canary seed may have a slight vernalization requirement that could explain the very poor yield on late seeded trials. Photoperiod sensitivity is another possibility when correlating poor yield to late seeding. Anecdotally, farmers have experienced poor yield during above average moisture growing seasons.

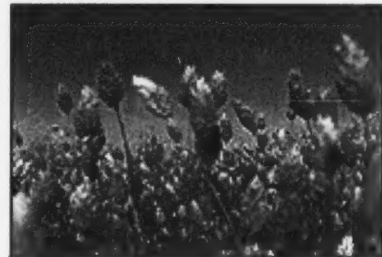


Figure 2: Canary seed heads.
Source: Saskatchewan Agriculture

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Variable Canary Seed Yield in 2010
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We cannot explain the highly variable yield in canary seed in 2010. The plants resisted the transition from vegetative to reproductive stages, and in 2010 they showed traits similar to their forage or fodder relatives. More information is needed on the phenology (relationship between biological attributes and climatic conditions) of canary seed. Information on plant and climate interaction would also help explain the variable yield that occurs from time to time. ☼

Starter Phosphate Fertilizer a Must Under Cool Moist Soils

By Ken Panchuk, PAg, Provincial Specialist, Soils

Crops require phosphate during early stages to promote healthy root growth, especially under cool, moist, soil conditions. This is often referred to as the “starter or pop-up” effect. Rapid uniform emergence allows the crop to take advantage of the long spring days for growth.

Phosphate also plays an important role in nitrogen-fixation of pulse crops and adequate phosphate enables crops to mature early.

Starter phosphate needs to be banded with or near the seed for optimal early uptake. Follow recommended application rates because some crops, such as field pea and flax, are sensitive to high rates of seed-placed phosphate.

Results of a long-term study on annual phosphate fertilizer additions in Saskatchewan soils were published in the Canadian Journal of Soil Science in 2011. Scientists concluded that the unused phosphorous (P) or “residual P” was not transformed into unavailable forms. In prairie soils, residual P is retained in forms that are available to crops in the long-term. This means that the unused portion of the starter phosphate fertilizer added each spring does become available over time, showing almost 100 per cent recovery in the long-term. Therefore, producers can be assured that almost all of the phosphate fertilizer added annually can be recovered over time, optimizing economic returns and P-use-efficiency.

Other macronutrients determined to be deficient by a soil test also need to be added in the correct amounts to form a balance of nutrients for optimal crop health and productivity.

For more information on starter phosphate fertilizer, refer to *Phosphorous Fertilization in Crop Production* and *Guidelines for Safe Rates of Fertilizer Applied with the Seed* on the Saskatchewan Agriculture website at: www.agriculture.gov.sk.ca/Soils_Fertility_Nutrients ☼

Camelina Provides Good Opportunity for Growers, But Still Needs Caution!

By Venkata Vakulabharanam, PAg, Provincial Specialist, Oilseed Crops

Camelina offers a good cropping option for growers, especially during a delayed seeding situation like 2011. However, it is important to understand that camelina, like other crops, needs due care and management. Camelina may not fit into all farms or all fields. Use care when picking the right fields to grow it. The following pointers can help:

- Camelina is a crucifer, so sensitivity to soil herbicide residues is similar to other crucifers like canola and mustard;
- There are limited in-crop weed control options, so pick a well managed field with fewer weeds;
- Pre-seed burn-off is the best weed control option;
- Similar to other crops, camelina is severely affected by water-logged conditions;
- Camelina seed is very small and should be planted very shallow (1/4 inch);
- Assure II is the only registered herbicide for use in camelina. Do not use any other unregistered pesticides as they can severely damage the crop and affect yields;
- Camelina is not a zero input crop. Similar to other cruciferous crops, it responds well to fertilizer. Good yields require optimum and balanced fertilizer application;
- Camelina can be swathed or straight-combined;
- It is recommended to grow camelina under contract with a reputable organization.



Figure 3: Camelina plant.
Source: Saskatchewan Agriculture

Saskatchewan Ministry of Agriculture recently published a fact sheet on camelina, including crop background and management practices:

www.agriculture.gov.sk.ca/camelina ⚙

Careful Planning Crucial When Seeding Forage

By Michel Tremblay, PAg, Provincial Specialist, Forage Crops

Establishing forage stands requires careful planning to obtain the best results and optimal production. Species selection, seeding method, weed control, soil fertility, and timing of seeding are all important factors to consider when planting a new field.

Climatic conditions, field characteristics, and the intended use of the forage produced are the primary considerations when selecting an appropriate forage species. The Saskatchewan Ministry of Agriculture *2011 Forage Crop Production Guide* and the fact sheet *Forages – Relative Cultivar Yields for Perennial Species* discuss perennial forage species adaptation and cultivar performance.

Seeding depth is an important factor to control when seeding. Planting at depths exceeding 2.5 centimeters (one inch) significantly reduces the emergence of forage seedlings. Deep seeding reduces emergence of species with small seed sizes and limited seed energy reserves. Ideally, seed should be placed at between 0.8 and 1.25 cm. Forages need a firm, fine seed bed for optimum seed placement, seed-to-soil contact, and subsequent germination and emergence. Minimizing soil disturbance prior to seeding reduces loosening of the seed bed and also conserves moisture – a critical consideration when seeding forages.



Figure 4: Depth control is crucial to successful establishment of forage species.
Source: Saskatchewan Agriculture.

Forage seedlings do not compete well with weeds and in-crop weed control options are limited and more expensive than pre-seeding options. Therefore, seeding should be delayed until weeds have been adequately controlled. Particular attention should be paid to perennial weeds as they can be impossible to control in-crop. Mowing weeds when they elongate but prior to seed set is an effective way to reduce competition and reduce weed seed production in the year of establishment.

Fields should have a soil test completed prior to seeding to determine the fertility status of the soil. Grass fields should have phosphorous and some nitrogen applied. Increased nitrogen applications should be delayed until after establishment. Alfalfa requires phosphorous and sulphur for optimal performance. Well inoculated alfalfa will be able to obtain its nitrogen through fixation.

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Careful Planning Crucial When Seeding Forage (Continued from page 7)

Phosphorous can be applied in greater quantities prior to planting and will remain available to the crop for several years.

Use of a "cover crop" when seeding forage is a common practice in Saskatchewan. Generally, cover crops compete with forage seedlings for moisture, nutrients and light. The risk of establishment failure due to competition from a cover crop increases with reduced available moisture. Avoid using a cover crop when seeding under dry conditions. In years with increased available moisture, the cover crop will have less negative impact on forage stand establishment and development.

Evaluate new forage stands in the summer or fall of the seeding year, or in the spring following the seeding year. Plant density is the primary measurement to evaluate establishment success. Plant densities should be determined at several points along a line crossing the entire field in order to have an accurate and comprehensive assessment of establishment. Densities of three to five plants per square foot or greater are considered the minimum number necessary for optimal production. Creeping rooted species may fill in thin stands over time.

Forage seeding requires thorough planning. Careful selection of species, effective weed control, soil fertility management, and seedbed preparation will maximize the probability of successful establishment. Monitor establishment success by determining density of seedlings to ensure a successful start to the forage crop. ☼

Glyphosate Resistant Canada Fleabane in Ontario

By Clark Brenzil, PAg, Provincial Specialist, Weeds

Glyphosate resistant Canada fleabane has recently been confirmed in several Ontario fields. University of Guelph researchers, Dr. Francois Tardif and Dr. Peter Sikkema, found that of 12 samples submitted by producers suspecting resistance, eight tested positive. Essex County, where all of the discoveries were found, is the southernmost county in Ontario.

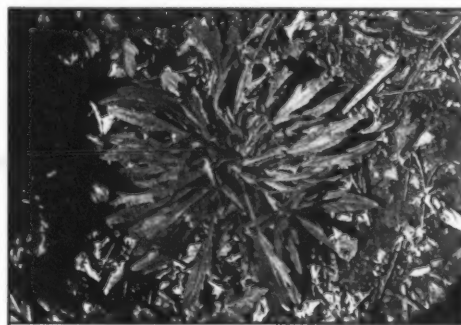


Figure 5: Canada Fleabane rosette.
Source: Saskatchewan Agriculture.

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Glyphosate Resistant Canada Fleabane in Ontario (Continued from page 8)



Figure 6: Flowering Canada Fleabane plants.
Source: Saskatchewan Agriculture.

Canada fleabane is a relatively common biennial or winter annual broadleaf weed in most of Canada - including Saskatchewan - but is easily controlled by most pre-seed treatments, including glyphosate. Canada fleabane commonly grows in shelterbelts and waste areas in Saskatchewan.

Glyphosate resistance was first discovered in Canada fleabane in 2000 in the state of Delaware. Because of its windborne seed, Canada fleabane has spread out rapidly from that initial discovery, and is now estimated to infest several million acres in the USA corn and soybean growing areas.

Experts have suspected that glyphosate resistant Canada fleabane would be found in Canada because of its wind-borne seed and its ability to move up to 500 kilometers in a single wind event. Because winds blow diamondback moth from the southern USA over states that have reported glyphosate resistant Canada fleabane, it is feasible for

glyphosate resistant Canada fleabane to land in Western Canada as well.

Producers that suspect that Canada fleabane or any other weed is surviving glyphosate applications are encouraged to submit a sample to the Saskatchewan Agriculture Crop Protection Laboratory for official testing and confirmation.

For more information contact:

Clark Brenzil, Provincial Specialist, Weed Control at 306-787-4673 or

The Crop Protection Lab for resistance testing information at 306-787-8130. ☉

The *Crop Production News* is a publication of the
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